



# Clinical Practice Guideline for the Management of Headache Disorders in Adults

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## Clinical Practice Guideline for the Management of Headache Disorders in Adults

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# Introduction

Headache is a common experience in adults. Recurring headaches negatively impact family life, social activity and work capacity. Headache is 3rd among reasons for seeking chiropractic care in North America.<sup>1</sup>

The aim of this clinical practice guideline is to improve the effectiveness of chiropractic care of patients with headaches. The guideline attests to the commitment of the profession to advance evidence-based practice.

This evidence-based Clinical Practice Guideline (CPG) is a supportive tool for chiropractors and their patients. The CPG contains treatment recommendations based on a systematic review and evaluation of the literature.<sup>2</sup> A journal version is available that describes the Guideline Development Committee (GDC)'s research and methods in detail.<sup>2</sup> Elements on headache diagnosis and patient safety are based on clinical experience and consensus of the GDC.

The aim is to improve the effectiveness of care for patients with headaches. Evidence-based practice has at its core the evaluation of evidence from clinical research, and the application of the knowledge to clinical settings. This guideline is not intended to include all possible methods of care for headaches presenting to a chiropractor or all clinically relevant criteria for choosing to use a specific treatment. Limitations exist in the published evidence.<sup>2</sup> If a treatment modality is not mentioned in this guideline, it is because there is no clinically significant research evidence available upon which to comment.<sup>2</sup> This clinical practice guideline is not intended to be used as a standard of care.

The GDC encourages practitioners to use their clinical judgment in making an accurate diagnosis, in light of a patient's specific clinical situation and to decide on the use of specific treatments. Practitioners know from clinical experience that not all patients benefit from the same physical or manual therapies in exactly the same manner. The recommendations for practice support outcomes such as reduced headache frequency, intensity and/or severity; decreased impairment and decreased medication use; disability due to headaches and their related symptoms; reduced costs – specifically from the reduced use of ineffective procedures; increased patient safety; and increased satisfaction among patients and health care payers.

## Key Points for the Clinician

- Headache types discussed in this guideline are migraine, tension-type and cervicogenic headache.
- The GDC supports the use of the International Headache Society's (IHS) classification of headache disorders to establish a universal approach to the diagnosis and management of headaches.<sup>3</sup>
- Spinal manipulation (defined as high velocity low amplitude thrusts delivered to the spine) is recommended for the management of patients with migraine or cervicogenic headaches.
- Multimodal, multidisciplinary interventions including massage may benefit patients with migraine.
- Spinal manipulation cannot be recommended for the management of episodic tension-type headaches. A recommendation cannot be made for or against the use of spinal manipulation for patients with chronic tension-type headaches.
- Low-load craniocervical mobilization may improve tension-type headaches.
- Joint mobilization or deep neck flexor exercises may improve symptoms of cervicogenic headaches.
- This guideline is a resource for the delivery of chiropractic care for patients with headaches. It is a "living document" and subject to revision with the emergence of new evidence. It is not a substitute for a practitioner's clinical experience and expertise.

The International Classification of Headache Disorders-2 (International Headache Society [IHS] Criteria)<sup>3</sup> is an evolving body of knowledge developed by healthcare specialists. The criteria are internationally agreed upon for identifying and assessing headache.

Accurate diagnosis of patients with headaches is key to management and treatment. A wide range of headache types are described in the International Classification of Headache Disorders (ICHD-2).<sup>3</sup> The classification of headache types is intended for clinical as well as research use and includes 2 broad categories: Primary and Secondary Headaches. Given the complexity of diagnosis and the unique nature of each patient's presentation, chiropractors are advised to choose the headache diagnosis that best defines the patient's headaches or include a differential diagnosis in the patient file. This approach is consistent with evidence-based practice, and supports patient-centered decision making on behalf of the chiropractor.

Any number of headache presentations can be seen in a chiropractic office. Evidence from controlled clinical trials, however, points to only a subset of these headache types that have been studied sufficiently to allow chiropractic treatment recommendations to be made.<sup>2</sup> These headache types include: migraine, tension-type headache and cervicogenic headache.

## Primary Headaches

Primary headaches are by definition "idiopathic." They occur for no obvious reason, and are not the result of any other underlying disease or condition. Common primary headaches are migraine and tension-type headaches. Tension-type headaches describe what previously were called "tension headaches," "muscle contraction headaches," or "stress headaches." Patients with tension-type headaches typically present with bilateral pain of a pressing or tightening quality (e.g. "band-like") and the headache pain is not aggravated by routine activities [Figure 1, 3]. Patients with migraine headaches typically present with unilateral distribution of headache pain, of a pulsatile quality and with accompanying nausea and/or vomiting [Figure 1, 2]. Episodic migraine or tension-type headaches occur fewer than 15 days per month, while chronic headaches occur 15 or more days per month for at least 3 (migraine) or 6 months (tension-type headache)<sup>3</sup> [Figure 1].

## Secondary Headaches

Secondary headaches are attributed to underlying clinical problems in the head or neck that may also be episodic or chronic [Figure 1]. Cervicogenic headaches are a common type of secondary headache encountered by chiropractors and are defined by the IHS as pain referred from a source in the neck and perceived in one or more areas of the head and/or face.<sup>3</sup> The diagnosis of cervicogenic headaches is characterized by clinical evidence that the headache can be attributed to a source of pain that originates in the neck. Specific clinical signs may reasonably include mechanical exacerbation of pain, reduced cervical range of motion, focal neck tenderness, and trigger points that refer pain to the head. According to strict IHS criteria, when myofascial pain alone is the cause of headache which may include associated pericranial tenderness but, in the absence of other clinical signs, the headache should be diagnosed as tension-type.<sup>3</sup>

# Diagnosis of Headache

See Figure 1.

Accurate diagnosis is supported by a thorough history and examination.

## Chiropractic Assessment

- Conduct a thorough patient history and physical examination to rule out a serious underlying cause of headache.
- Ask probing questions to understand key features of patient history and symptoms to differentiate headache types.
- Identify any findings that would reflect a problem within the head or neck and alert you to a more serious form of headache (eg, SNOOP on page 9).
- Consider using existing tools to facilitate headache diagnosis, to assess headache impact, headache-related disability and to track treatment outcomes:
  - Headache Diary<sup>4</sup>
  - Migraine Disability Assessment Scale (MIDAS)<sup>5</sup>
  - ID Migraine<sup>6</sup>
  - Headache Impact Test (HIT)<sup>7</sup>

Consider asking your patients with headaches to maintain a hard-copy or on-line headache diary<sup>4</sup> to track the frequency, duration, intensity and evolution of their headaches.

## Diagnostic Challenges

### *Tension-Type Headaches versus Cervicogenic Headaches*

Despite recent advances in the understanding and diagnosis of tension-type headaches and cervicogenic headaches, controversy exists in practice and in the literature regarding aetiology and diagnostic descriptors for these headache types. The GDC acknowledges the inconsistencies do exist. In order to move forward with practice recommendations, the GDC considers it imperative that practitioners embrace the IHS classification and reconsider the aetiology and diagnostic descriptors of what are labeled as tension-type headaches and cervicogenic headaches.

### *Co-Existing Headaches*

Patients with headache pain may pose diagnostic challenges when they present with symptoms attributable to more than one headache type. When a patient presents with symptoms of more than one type of headache, each headache should be diagnosed separately and managed appropriately. No clinical trial data from a chiropractic perspective are available for the GDC to formulate evidence-based recommendations for the management of co-existing headaches.

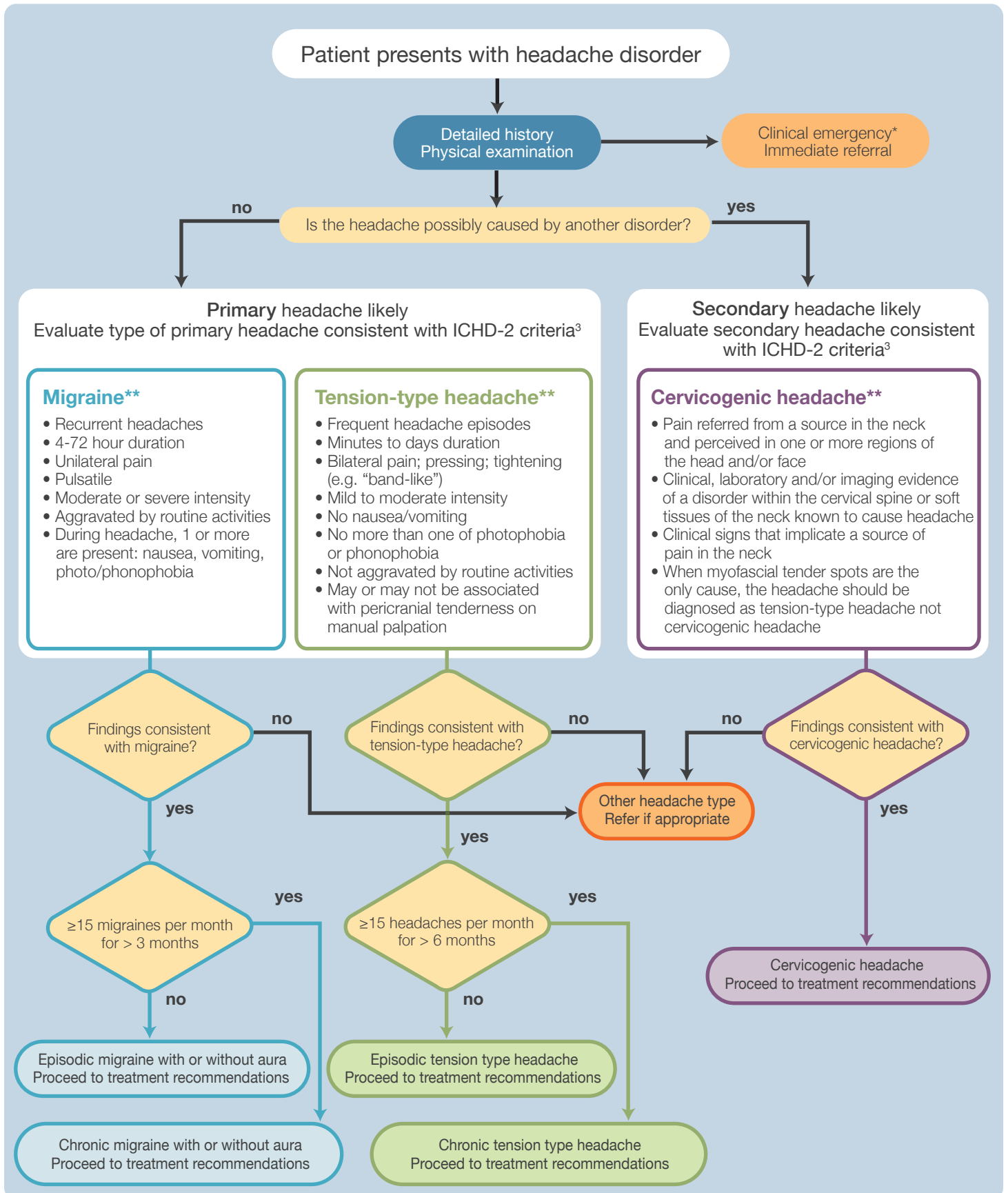
## Pharmacotherapy

The research literature shows that chiropractic care may be concurrent with pharmacological treatment or may provide an alternative to it.<sup>2</sup> Practitioners should inquire as to potential acute or preventive medications used routinely for headache pain for a more comprehensive approach to patient management. This information may also be documented by patients in their Headache Diary. Published evidence on the combination of pharmacotherapy and chiropractic management of patients with headaches indicates that the use of pharmacotherapy does not affect the choice of chiropractic treatment modality.



# Headache Diagnosis Algorithm

Figure 1: Chiropractic Assessment of Headache



\* "Worst headache ever"; Patient complains of neck or occipital pain with a sharp quality and severe and persistent headache. Sudden onset headache unlike any previously experienced; Seizures; Neurological signs; Symptoms of systemic illness.

\*\* Only migraine, tension-type and cervicogenic headaches are included in this algorithm because they are the only headache types with clinically significant research evidence upon which to comment for this clinical practice guideline.<sup>2</sup>

The International Classification of Headache Disorders 2nd edition (ICHD-2)<sup>3</sup> should be consulted for complete diagnostic information.

## Practice Recommendations

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See Figures 2 to 4.

A technical version of this clinical practice guideline describes in detail the GDC's methods for assessing the research literature, establishing the level of evidence and generating recommendations for practice.<sup>2</sup>

### Patients with Migraine Headaches

- Spinal manipulation is recommended for the treatment of patients with episodic or chronic migraine with or without aura (treatment frequency 1-2x per week for 8 weeks).<sup>8,9</sup>
- Weekly massage therapy is recommended for reducing episodic migraine frequency and for improving affective symptoms potentially linked to headache pain (45 minute massage with focus on neuromuscular and trigger point framework of back, shoulder, neck and head).<sup>10</sup>
- Multimodal, multidisciplinary care (exercise, relaxation, stress & nutritional counseling, massage therapy)<sup>11</sup> is recommended for the management of patients with episodic or chronic migraine.

There is insufficient clinical data to recommend for or against the use of exercise alone or exercise combined with multimodal physical therapies for the management of patients with episodic or chronic migraine (aerobic exercise, cROM or whole body stretching).<sup>2</sup>

### Patients with Tension-type Headaches

- Low load craniocervical mobilization (eg, Resistance Exercise Systems, TheraBand®) is recommended for longer term management of patients with episodic or chronic tension-type headaches (10 minutes, 2x per day for 6 weeks, then at least 2x per week for 6 months).<sup>12</sup>
- Spinal manipulation cannot be recommended for the treatment of patients with episodic tension-type headaches.<sup>2</sup> Spinal manipulation, following pre-manipulative soft tissue therapy, provides no added benefit for reducing tension-type headaches.<sup>13</sup>

A recommendation cannot be made for or against the use of spinal manipulation for patients with chronic tension-type headaches.<sup>2</sup> There is insufficient evidence to recommend for or against the use of manual traction, connective tissue manipulation, Cyriax's mobilization, or exercise/physical training for patients with episodic or chronic tension-type headaches.<sup>2</sup>

### Patients with Cervicogenic Headaches

- Spinal manipulation is recommended for the treatment of patients with cervicogenic headaches (2x per week for 3 weeks).<sup>14</sup>
- Joint mobilization is recommended for the treatment of patients with cervicogenic headaches (Maitland joint mobilization 8-12 treatments over 6 weeks).<sup>15</sup>
- Deep neck flexor exercises are recommended for the treatment of patients with cervicogenic headaches (2x daily over 6 weeks).<sup>15</sup> There is no consistently additive benefit of combining deep neck flexor exercises and joint mobilization for cervicogenic headaches.<sup>15</sup>

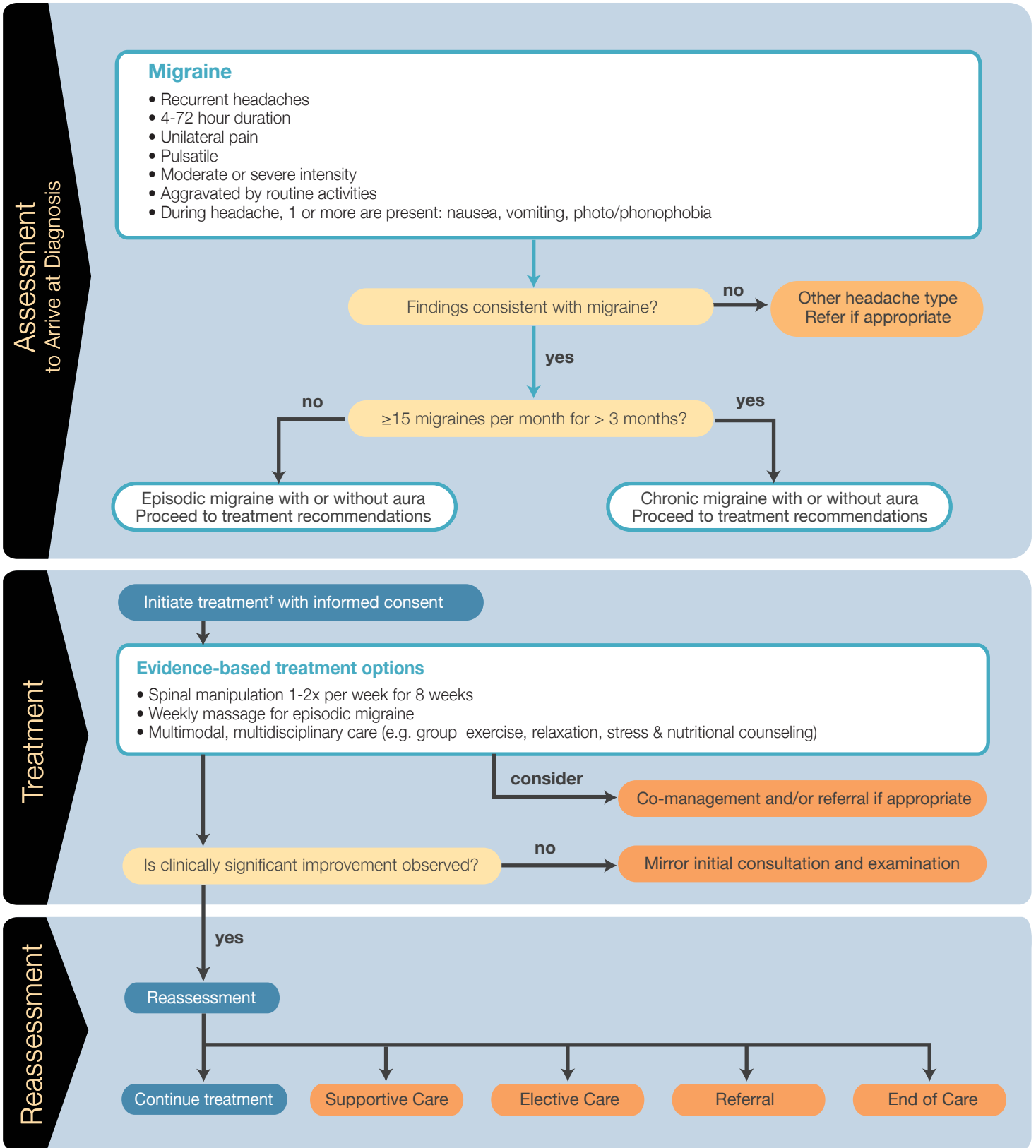
Current evidence supports the use of spinal manipulation for patients with migraine or cervicogenic headaches.<sup>2</sup>



# Figure 2: Migraine Headache Algorithm

## Chiropractic Management of Patients with Migraine

Follow the sequential steps to guide patient assessment, treatment and reassessment. The selection, frequency, dosage and duration of treatment(s) will depend on the nature of the headaches, your clinical judgment and knowledge of the patient's best interest.

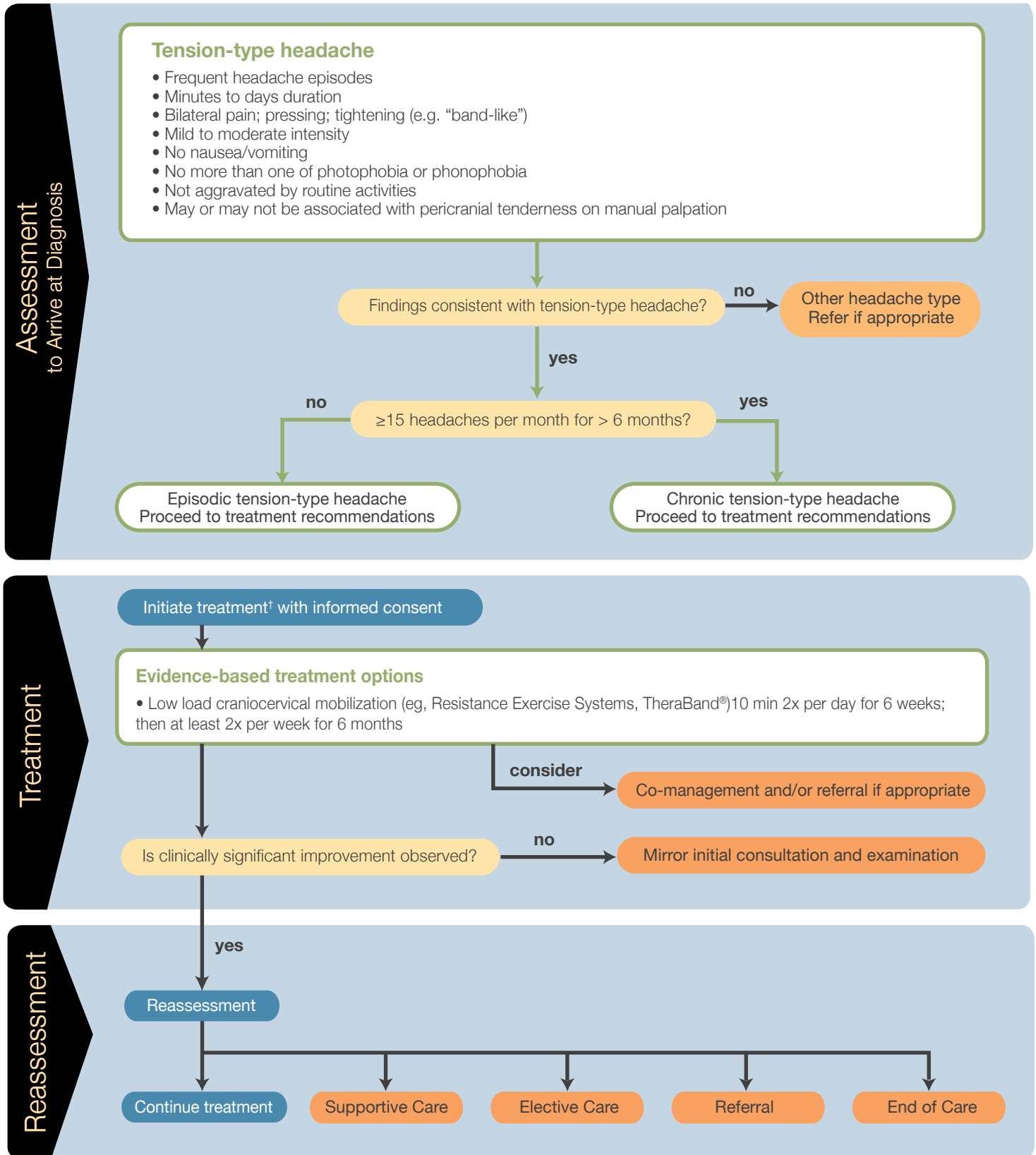


<sup>†</sup>Treatment frequency and duration are listed as published in clinical research studies<sup>2</sup>

# Figure 3: Tension-type Headache Algorithm

## Chiropractic Management of Patients with Tension-type Headaches

Follow the sequential steps to guide patient assessment, treatment and reassessment. The selection, frequency, dosage and duration of treatment(s) will depend on the nature of the headaches, your clinical judgment and knowledge of the patient's best interest.

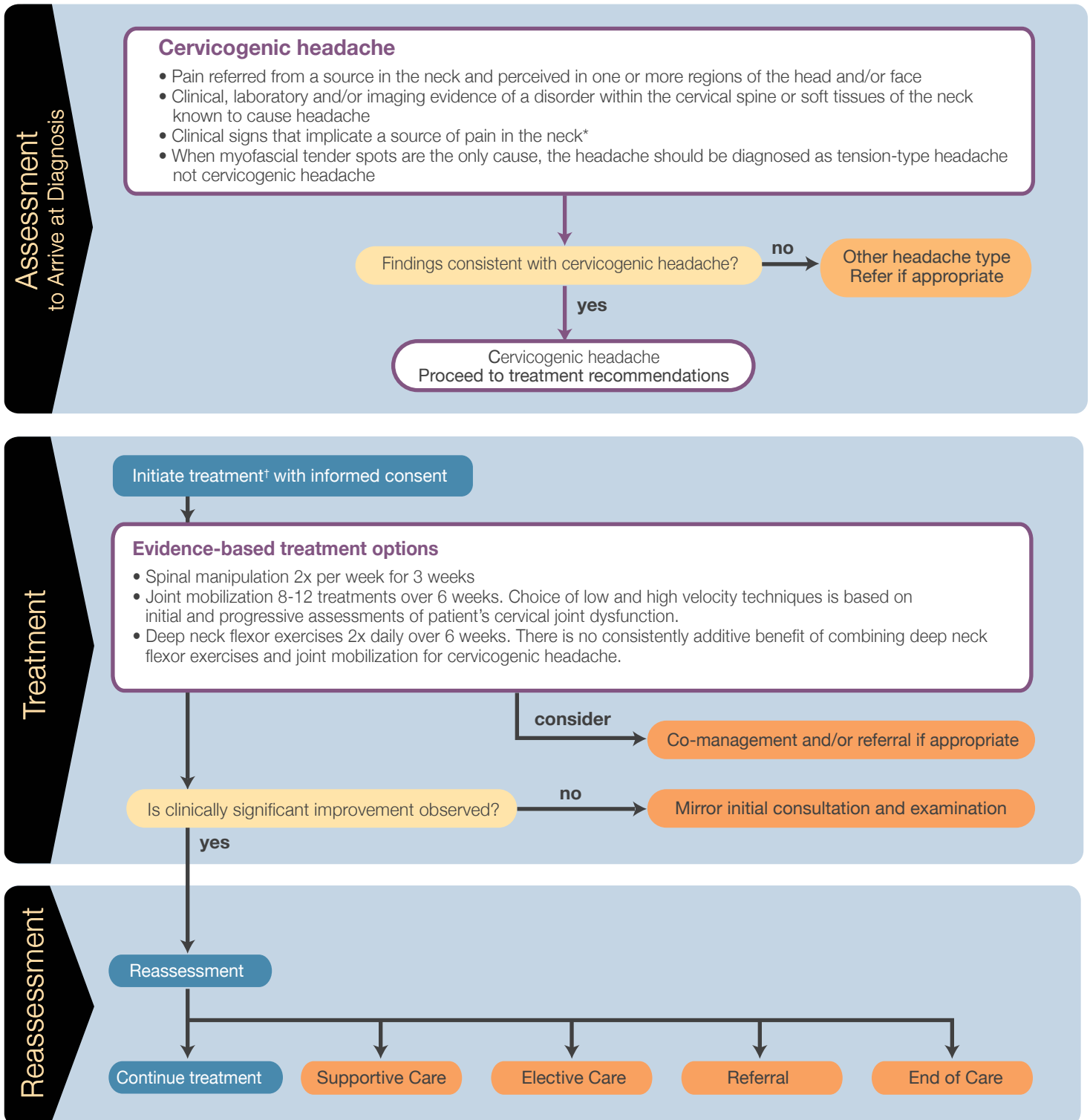


<sup>†</sup>Treatment frequency and duration are listed as published in clinical research studies<sup>2</sup>

# Figure 4: Cervicogenic Headaches Algorithm

## Chiropractic Management of Patients with Cervicogenic Headaches

Follow the sequential steps to guide patient assessment, treatment and reassessment. The selection, frequency, dosage and duration of treatment(s) will depend on the nature of the headaches, your clinical judgment and knowledge of the patient's best interest.



†Treatment frequency and duration are listed as published in clinical research studies<sup>2</sup>

\*Clinical signs may reasonably include mechanical exacerbation of pain, reduced cervical range of motion, focal neck tenderness, and trigger points that refer to the head. According to strict IHS criteria,<sup>3</sup> when myofascial pain alone is the cause which may include associated pericranial tenderness but, in the absence of the other clinical signs noted above, the headache should be diagnosed as tension-type.

# Managing The Risk Of Adverse Events

This Practice Guideline does not provide a comprehensive overview of all safety issues relevant to chiropractic care. Detailed information is available elsewhere.<sup>16-19</sup>

- The literature synthesis for this clinical practice guideline found that adverse events were not addressed in most clinical trials of spinal manipulation for the treatment of headaches, and if reported they were minor.<sup>2</sup>
- All patients presenting with headache require increased vigilance by the practitioner. Serious pathology must be excluded through history, examination and possibly further testing.
- Dissection of a cervical artery (CAD) is one potential cause of secondary headache. Risk factors for CAD in patients under the age of 45 include smoking and the use of oral contraceptives. Practitioners should be aware that recent research suggests that migraine with aura may be a risk factor for CAD<sup>21,22</sup> whereas migraine without aura is not.<sup>21</sup> Further research is needed to develop a full understanding of the balance between benefits and risks for patients with headaches.

The SNOOP instrument, as adapted below, can be used as part of the diagnostic process.

## Figure 5. The SNOOP Instrument

The mnemonic "SNOOP" has been developed by researchers in other primary healthcare settings as a reminder of the red flags that may point to the potential of a more serious, secondary headache.<sup>20</sup>

MNEMONIC	MEANING	EXAMPLES
<b>S</b>	Systemic sign or symptoms	Fever, weight loss, history of malignancy or HIV, meningismus
<b>N</b>	Neurologic signs or symptoms	Hemiparesis, hemisensory loss, diplopia, dysarthria
<b>O</b>	Onset	"Worst headache of life," headache that reaches peak intensity within seconds to minutes (eg, thunderclap headache)
<b>O</b>	Older Age	New onset headache >40 years of age
<b>P</b>	Progression of existing headache disorder	Change in the quality, location, or frequency of existing headaches

HIV= Human immunodeficiency virus.

# Questions and Answers with the Guidelines Development Committee (GDC)

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- **How frequently should chiropractors treat certain headache types?**

The treatment frequencies provided in the recommendations for practice for the treatment of migraine, tension-type and cervicogenic headaches were extracted directly from the published papers. The selection, frequency, dosage and duration of treatment(s) will depend on the nature of the headaches, your clinical judgment and knowledge of the patient's best interest.

- **Why should my patients complete Headache Diaries or Assessment Tools to evaluate how they are doing?**

The tools help in diagnosis, and track over time whether a patient is improving and care can be tailored accordingly. The GDC encourages practitioners to use available headache tools in practice.

- **How can I use this guideline in a subluxation-based practice?**

The sequence of assessment, diagnosis, treatment, and reassessment is relevant to your management of the patient regardless of your focus.

- **If a treatment is not present in the guideline, does that mean I should not use it?**

If a treatment is not mentioned in the guideline, it is because the GDC did not find any clinically significant research upon which to comment. You should use your clinical judgment and the patient's best interest to decide whether and how to use the treatment.

- **This is a chiropractic guideline. Why mention pharmacotherapy?**

The evidence shows that chiropractic care may be concurrent with pharmacological treatment for patients with headache and reflects that pharmacotherapy is a nearly ubiquitous part of the current therapeutic context for headache. Chiropractors are encouraged to work collaboratively with prescribing health care professionals to the benefit of the patient. If a change in medication is in the best interest of the patient upon reassessment or noting a clinically important status change, suggest the patient speak with his or her prescribing health care professional or pharmacist.

- **What if my patient has associated comorbid conditions? Should I use this guideline?**

Yes. While respecting the guideline recommendations, if the comorbidity falls within your scope of practice, use your clinical judgment and knowledge of the patient's best-interest to determine treatment. If the comorbidity falls outside your scope of practice, the patient should be referred to by the appropriate clinical professional.

- **Do I treat a patient with episodic tension-type headache with spinal manipulation?**

In this guideline, the GDC has adopted the IHS classification of headache types as the universal approach to the diagnosis of headache. If you have not done so, reconsider your diagnosis in light of the IHS classification. This reconsideration may result in a different diagnosis of either cervicogenic headache or of coexisting cervicogenic and episodic tension-type headaches. To the extent that your diagnosis is cervicogenic headache or coexisting cervicogenic and episodic tension-type headache, the GDC's recommendation is that you include spinal manipulation as an option among the modalities you employ in managing your patient's headaches. If your diagnosis remains that of an episodic tension-type headache, the GDC cannot recommend that you include spinal manipulation as one of the modalities you choose to employ in treating your patient's headaches.

## Questions and Answers (continued)

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- **How did the GDC define the scope of chiropractic care for this guideline?**

Chiropractic treatment was defined as including the most common therapies employed by practitioners, and was not restricted to treatment modalities delivered only by chiropractors. A wide net was cast to include treatments that may be administered in chiropractic care, as well as those which could also be delivered in the context of care by other healthcare professionals in specific research studies.<sup>2</sup>

- **How are you going to ensure that these guidelines won't be abused by a third-party?**

We cannot.

- **Can I be sued more easily if I don't follow this guideline?**

This guideline is not a standard "set" by others or a standard that is set by your regulatory board. This guideline describes treatment practices directly supported by the current evidence. Not all practice elements are covered in this guideline and, thus, the GDC considers that this guideline cannot be used to limit practice.

- **I'm concerned about the lack of evidence regarding some aspects of my treatment(s) for patients with headaches. What can the profession do about this?**

Sufficient evidence exists to support the treatment recommendations found in this guideline. It is hoped that the guideline will prompt further relevant research by pointing out areas which would benefit from additional research.

- **Do I have to follow the guideline "to the letter"?**

Although practice guidelines can link the best available evidence to good clinical practice, they are only one component of an evidence-informed approach to providing good care. Clinical Practice Guidelines are not standards that dictate practice, but rather guides and tools for chiropractors and their patients. Each guideline The CCA•CFCREAB-CPG Project is publishing will reflect a literature synthesis based on currently available evidence.

- **Does this guideline's limitation to those over 18 years of age mean that chiropractic management of headache for patients under the age of 18 is inappropriate?**

No. This guideline does not intend to restrict chiropractic care of headache to those over 18. Our recommendations are based on an analysis of studies that included subjects predominantly older than 18 years of age.

- **What headache types require immediate referral?**

Those headache presentations with "red flags" including those that satisfy SNOOP criteria.



# References

1. Coulter ID, Hurwitz EL, Adams AH, et al. Patients using chiropractors in North America: who are they, and why are they in chiropractic care? *Spine (Phila Pa 1976)* 2002;27:291-6
2. Bryans R, Descarreaux M, Duranleau M, et al. Evidence-based guideline for the chiropractic treatment of adults with headache. *J Manipulative Physiol Ther.* 2011 Jun;34(5):274-89.
3. International Headache Society. *The International Classification of Headache Disorders: 2nd edition.* Cephalalgia 2004;24 Suppl 1:9-160.
4. Headache Network Canada. [http://www.headachenetwork.ca/headache\\_diaries.php](http://www.headachenetwork.ca/headache_diaries.php)
5. Stewart WF, Lipton RB, Dowson AJ, et al. Development and testing of the Migraine Disability Assessment (MIDAS) Questionnaire to assess headache-related disability. *Neurol* 2001;56(6 Suppl 1): S20-8.
6. Lipton RB, Dodick D, Sadovsky R, et al. A self-administered screener for migraine in primary care: The ID Migraine validation study. *Neurol* 2003;61(3):375-82.
7. Kosinski M, Bayliss MS, Bjorner JB et al. A six-item short-form survey for measuring headache impact: the HIT-6. *Qual Life Res* 2003;12(8):963-74.
8. Nelson CF, Bronfort G, Evans R, et al. The efficacy of spinal manipulation, amitriptyline and the combination of both therapies for the prophylaxis of migraine headache. *J Manipulative Physiol Ther.* Oct 1998;21(8):511-19
9. Tuchin PJ, Pollard H, Bonello R. A randomized controlled trial of chiropractic spinal manipulative therapy for migraine. *J Manipulative Physiol Ther.* Feb 2000;23(2):91-95
10. Lawler SP, Cameron LD. A randomized, controlled trial of massage therapy as a treatment for migraine. *Ann Behav Med.* Aug 2006;32(1):50-59.
11. Lemstra M, Stewart B, Olszynski WP. Effectiveness of multidisciplinary intervention in the treatment of migraine: a randomized clinical trial. *Headache.* Oct 2002;42(9):845-54.
12. van Ettekoven H, Lucas C. Efficacy of physiotherapy including a craniocervical training programme for tension-type headache; a randomized clinical trial. *Cephalalgia.* Aug 2006;26(8):983-91.
13. Bove G, Nilsson N. Spinal manipulation in the treatment of episodic tension-type headache: a randomized controlled trial. *JAMA.* Nov 11 1998;280(18):1576-79.
14. Nilsson N, Christensen HW, Hartvigsen J. The effect of spinal manipulation in the treatment of cervicogenic headache. *J Manipulative Physiol Ther.* Jun 1997;20(5):326-30.
15. Jull G, Trott P, Potter H, et al. A randomized controlled trial of exercise and manipulative therapy for cervicogenic headache. *Spine (Phila Pa 1976).* Sep 1 2002;27(17):1835-43.
16. Terrett AGJ. *Current concepts in vertebrobasilar complications following spinal manipulation.* 2nd ed. NCMIC Group Inc. West Des Moines, Iowa, 2001.
17. Rubinstein SM, Leboeuf-Yde C, Knol DL et al. The benefits outweigh the risks for patients undergoing chiropractic care for neck pain: a prospective, multicenter, cohort study. *J Manipulative Physiol Ther.* 2007;30(6):408-18.
18. Rubinstein SM, Leboeuf-Yde C, Knol DL et al. Predictors of adverse events following chiropractic care for patients with neck pain. *J. Manipulative Physiol Ther.* 2008;31(2):94-103.
19. Rubinstein SM, Knol DL, Leboeuf-Yde C et al. Benign adverse events following chiropractic care for neck pain are associated with worse short-term outcomes but not worse outcomes at three month. *Spine (Phila Pa 1976).* 2008;33(25):E950-6.
20. Martin VT. Simplifying the diagnosis of migraine headache. *Adv Stud Med.* 2004;4:200-207
21. Artto V, Metso TM, Metso AJ, et al. Migraine with aura is a risk factor for cervical artery dissection: a case-control study. *Cerebrovasc Dis.* 2010;30:36-40.
22. Rubinstein SM, Peerdeman SM, van Tulder MW. A systematic review of the risk factors for cervical artery dissection. *Stroke.* 2005;36:1575-1580.